Software Engineering Co-op Experience

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Northeastern University, December 2025

B.S. in Computer Science, Concentration in Software, Minor in Mathematics

Prior experience

- Full Stack Developing Co-op at Liberty Mutual
- Research on digitizing lab notebooks with the goal of applying unsupervised clustering to look for data patterns in failed/successful experiments

Goals

- Short term: finish my last 6 classes in the summer and fall semesters, look for full-time opportunities as a software engineer or full stack developer
- Long term: Get my masters in something CS or math related in the future!

Interests: Running, yoga, volunteering, & traveling

Takeaways

Technical & Professional Skills

- Learned unfamiliar backend skills including database operations, MySQL, Flask, and experience with git submodules
- Gained experience using AWS technologies including, S3 buckets, boto3, IAM, and Cloud Formation
- Actively engaged in Agile practices such as ticket creation, daily standup, sprint planning, and technical debt meetings

Events

- Codex team hackathons
- Bio-It World Conference
- RNAi walking club

Acknowledgments: A huge thank you to my manager, Gabe Rosen, for his guidance and mentorship. And thanks to Bill Mounts and the rest of the Codex team, Dickson Lau, Sam Hastings, Siddhartha Saha, Susan Glass, Andrew Berardinelli, Jackie Der, Nick Wood, Cam Lee, and Mimi Yu for all their support. Lastly thank you to everyone else who contributed to my co-op.
I have had an outstanding experience!

Project Highlights

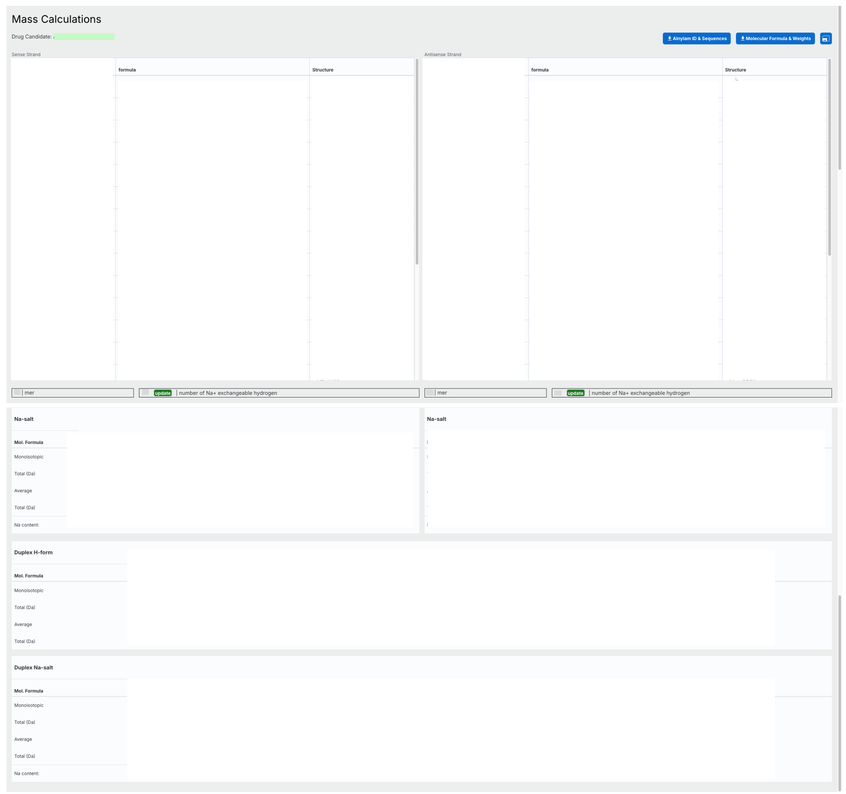
Re-Deployer Feature

Problem: The development database is not as up to date as the staging or production databases. Leads to missing data in first stages of development.

Action: Create a new tool for internal use in the Codex team to “redeploy” pull requests

- Allows users to switch between pointing a pull request ECS to the dev or staging database
- Used boto3 to point the service in AWS to the selected PR branch

Result: Feature was added to the Codex Deploy tool. The Codex team can now point to the staging database, which supports code reviews with accurate and representative staging data.



CMC Calculation App

Problem: CMC team previously used an excel file as a template for drug candidates to calculate the Hydrogen- and Sodium-form masses

- Heavy workload for the team; manually modify every 5’, 3’ base

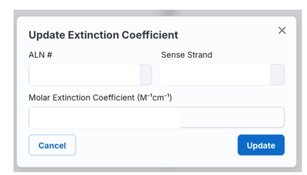
Action: Developed an application!

- Landing page: list of drug candidates, and hyperlinks to individual calculations page
- Strand tables with information about each base
- Downloadable tables with duplex sequence information converting to PS1, teams’ standard, and masses
- Uses rules given by CMC team to determine the number of Na+ exchangeable hydrogen, used in Na-salt form calculations
- Admin view: allows manual updates to the database for strand exchangeable Na+ hydrogen and adding a molar extinction coefficient. Admins are automatically emailed when changes are made

Result: Will be used by the CMC team to improve and streamline their processes for drug candidates

Knowledge Gained:

- Gave live demos to Amresh and Matthias gathering direct feedback on both the essential requirements and the preferred features of the app
- Basic science terms, learned about strand sequences, Na-salt forms, etc
- Gained a lot of valuable experience coding in the backend as well as using databases and SQL queries
- Sharpened React, Python, and Typescript skills



Molecule	Alnylam ID	Sequence/Description			
sense strand					
antisense strand					